LOT 18-19 CONCESSION 5

Site Number 010034

EAST ¼ LINE ROAD, WOODHOUSE

0.16 km S of Concession 6 Road

Ontario Structure Inspection Manual - Inspection Form **Site Number:** 010034

Inventory Data:

Structure Name	Lot 18-19 Concession 5		
Main Hwy/Road #	E1/4 WOODHOUSE	[X] On / [ ] Under	Crossing Type: [ ] Rail [ ] Road [ ] Navig. Water [ ] Ped. [ ] Other [X] Non-Navig. Water
Hwy/Road Name	EAST ¼ LINE ROAD, WOODHOUSE		
Structure Location	0.16km S of Concession 6 Road		
Latitude	42d 51' 08.5" N	Longitude	80d 10' 15" W
Owner(s)	Norfolk County	Heritage Designation: [X] Not Cons. [ ] Cons./not App. [ ] List/not Design. [ ] Desig./not List [ ] Desig. & List	
MTO Region	30 Southwestern	Road Class: [ ] Freeway [ ] Arterial [ ] Collector [X] Local	
MTO District	31 London / Stratford	Posted Speed: 80	No. of Lanes: 2
Old County	20 Norfolk	AADT: 83	% Trucks:
Geographic Twp.	215 Woodhouse	Inspection Route Sequence:	
Structure Type	15 Rigid Frame, Vertical Legs	Interchange Number:	
Total Deck Length	12.2 (m)	Interchange Structure Number:	
Overall Str. Width	21.6 (m)	Min. Vertical Clearance: 2.6 (m)	
Total Deck Area	263.5 (m^2)	Special Route [ ] Truck [ ] Emergency [X] School [ ] Bicycle	
Roadway Width	9 (m)	Detour Length Around Bridge: 10 (km)	
Skew Angle	(Degrees)	Direction of Structure: East / West	
No. of Spans	2	Fill on Structure: 0.5 (m)	
Span Length	2 @ 5.5 (m)		

Historical Data:

Year Built	1966	Year of Last Major Rehab.	
Last OSIM Inspection	May 28, 2014	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

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Field Inspection Information:			
Date of Inspection:	July 20, 2016	Type of Inspection:	[X] OSIM [ ] Enhanced OSIM
Inspector:	Ben Buchwald M.Eng., EIT, G. Douglas Vallee Ltd.		
Others in Party:	N/A		
Access Equipment Used:	Hammer, Binoculars, Measuring Tape, Camera, etc.		
Weather:	Sunny		
Temperature:	19 ^{o}C		

Additional Investigation Required:		Priority		
		None	Normal	Urgent
Material Condition Survey				
X	Detailed Deck Condition Survey:	X		
X	Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
X	Concrete Substructure Condition Survey:	X		
X	Detailed Coating Condition Survey:	X		
X	Detailed Timber Investigation	X		
X	Post-Tensioned Strand Investigation	X		
Underwater Investigation:		X		
Fatigue Investigation:		X		
Seismic Investigation:		X		
Structure Evaluation:		X		
Monitoring				
X	Monitoring of Deformations, Settlements and Movements:	X		
X	Monitoring Crack Widths:	X		

Investigation Notes:
No hazard signs or barriers and posts.

Overall Structure Notes:			
Recommended Work on Structure:	[ ] None [X] Maintenance	[ ] Minor Rehab. [ ] Major Rehab.	[ ] Replace
Timing of Recommended Work:	[ ] 1 to 5 years	[ ] 6 to 10 years	
Overall Comments:			
Date of next Inspection:	July 20, 2018		

Suspected Performance Deficiencies

01	Load carrying capacity	**07**	Bearing not uniformly loaded/unstable	**12**	Slippery surfaces
02	Excessive deformations (deflections & rotations)	**08**	Jammed expansion joint	**13**	Flooding/channel blockage
03	Continuing settlement	**09**	Pedestrian/vehicular hazard	**14**	Undermining of foundation
04	Continuing movements	**10**	Rough riding surface	**15**	Unstable embankments
05	Seized bearings	**11**	Deck drainage	**16**	Other

Maintenance Needs

01	Lift and swing bridge maintenance	**07**	Repair to structural steel	**13**	Erosion control at bridges
02	Bridge cleaning	**08**	Repair of bridge concrete	**14**	Concrete sealing
03	Bridge handrail maintenance	**09**	Repair of bridge timber	**15**	Rout and seal
04	Painting steel bridge structures	**10**	Bailey bridges - maintenance	**16**	Bridge deck drainage
05	Bridge deck joint repair	**11**	Animal/pest control	**17**	Scaling (Loose concrete or ACR steel)
06	Bridge bearing maintenance	**12**	Bridge surface repair	**18**	Other

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Rehabilitation Required:		Element	Priority				Estimated Construction Cost
Rehab	Replace		Urgent	Within 1 yr	1-5 yrs	6-10 yrs	
		Wearing Surface (Approaches)					
		Barrels					
		Inlet Components					
		Outlet Components					
		Streams and Waterways					
						Total Cost	$0

Associated Work:	Comments	Estimated Construction Cost
Additional Investigations		
Traffic Management		
Utilities		
Road Allowance		
Environmental Assessment		
Engineering		
Other		
Contingencies		
	Total Cost	$0

Justification:

Notes:

Construction Cost:	$0
Associated Work Cost:	$0
TOTAL Estimated Cost:	$0

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Element Data

Element Group:	1600	Approaches				Length:	30
Element Name:	1601	Wearing Surface (Approaches)				Width:	8
Location:		Top of Fill				Height:	
Material:						Count:	1
Element Type:						Total Quantity:	240 sq.m
Environment:		Severe				Limited Inspection:	
Protection System:		None				Perform. Deficiencies	
Condition	Units	Exc.	Good	Fair	Poor		
Data:	sq.m	0	240	0	0		
Comments:							
Recommended Work:	Rehab ☐	Replace ☐				Maintenance Needs:	
Timing:	Urgent ☐	< 1yr ☐	1 - 5 yr ☐	6 - 10 yr ☐		☐ Urgent ☐ 1 year	☐ 2 year

Element Group:	1200	Culverts				Length:	21.6
Element Name:	1203	Barrels				Width:	5.5
Location:						Height:	2.6
Material:	4	Cast-in-place Concrete				Count:	2
Element Type:						Total Quantity:	462.2 sq.m
Environment:		Moderate				Limited Inspection:	
Protection System:		None				Perform. Deficiencies	
Condition	Units	Exc.	Good	Fair	Poor		
Data:	sq.m	0	462.2	0	0		
Comments: Vertical crack in south barrel at west side with leakage and signs of chlorides. Deterioration below drains in north barrel. Joint leaking in both barrels with leakage and chlorides.							
Recommended Work:	Rehab ☐	Replace ☐				Maintenance Needs:	Repair of Bridge Concrete
Timing:	Urgent ☐	< 1yr ☐	1 - 5 yr ☐	6 - 10 yr ☐		☐ Urgent ☐ 1 year	☒ 2 year

Element Group:	1200	Culverts				Length:	12.2
Element Name:	1201	Inlet Components				Width:	0.4
Location:		West End				Height:	2.6
Material:	4	Cast-in-place Concrete				Count:	1
Element Type:						Total Quantity:	9 sq.m
Environment:		Moderate				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	
Condition	Units	Exc.	Good	Fair	Poor		
Data:	sq.m	0	8	1	0		
Comments: Minor cracking and delamination on soffit.							
Recommended Work:	Rehab ☐	Replace ☐				Maintenance Needs:	Repair of Bridge Concrete
Timing:	Urgent ☐	< 1yr ☐	1 - 5 yr ☐	6 - 10 yr ☐		☐ Urgent ☐ 1 year	☒ 2 year

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Element Data

Element Group:	1200	Culverts				Length:	12.2
Element Name:	1202	Outlet Components				Width:	0.4
Location:		South End				Height:	2.6
Material:	4	Cast-in-place Concrete				Count:	1
Element Type:						Total Quantity:	9 sq.m
Environment:		Moderate				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	

Condition Data:	Units	Exc.	Good	Fair	Poor
	sq.m	0	7	2	0

Comments:
Delamination with chlorides on southeast corner, wingwall and on east fascia.

Recommended Work:	Rehab	Replace			Maintenance Needs:	Repair of Bridge Concrete
Timing:	Urgent ☐	< 1yr ☐	1 - 5 yr ☐	6 - 10 yr ☐	☐ Urgent ☐ 1 year	☒ 2 year

Element Group:	1400	Embankments & Streams				Length:	
Element Name:	1401	Streams and Waterways				Width:	
Location:						Height:	
Material:						Count:	1
Element Type:						Total Quantity:	1 All
Environment:		Moderate				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	

Condition Data:	Units	Exc.	Good	Fair	Poor
	All	0	1	0	0

Comments:
No guiderail and hazard signs.

Recommended Work:	Rehab	Replace			Maintenance Needs:	
Timing:	Urgent ☐	< 1yr ☐	1 - 5 yr ☐	6 - 10 yr ☐	☐ Urgent ☐ 1 year	☐ 2 year

Figure 1 North Approach

Figure 2 South Approach

Figure 3 East Profile, Outlet

Figure 4 West Profile, Inlet

Figure 5 Upstream

Figure 6 Downstream

Figure 7 North Barrel

Figure 8 South Barrel

Figure 9 Delamination with chlorides at Southeast Quadrant

Figure 10 Leakage with chlorides at Joint in North Barrel

Figure 11 Staining and Deterioration Below Joints in North Barrel

Figure 12 Vertical Crack with Leakage and Chlorides in South Barrel